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Thesis

The Centralization of Secondary Education in Certain Supervisory Unions in New Hampshire

Submitted by

Francis Cornelius Reagan

(A. B. Dartmouth College, 1917)

In Partial Fulfillment of Requirements for the

Degree of

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Outline

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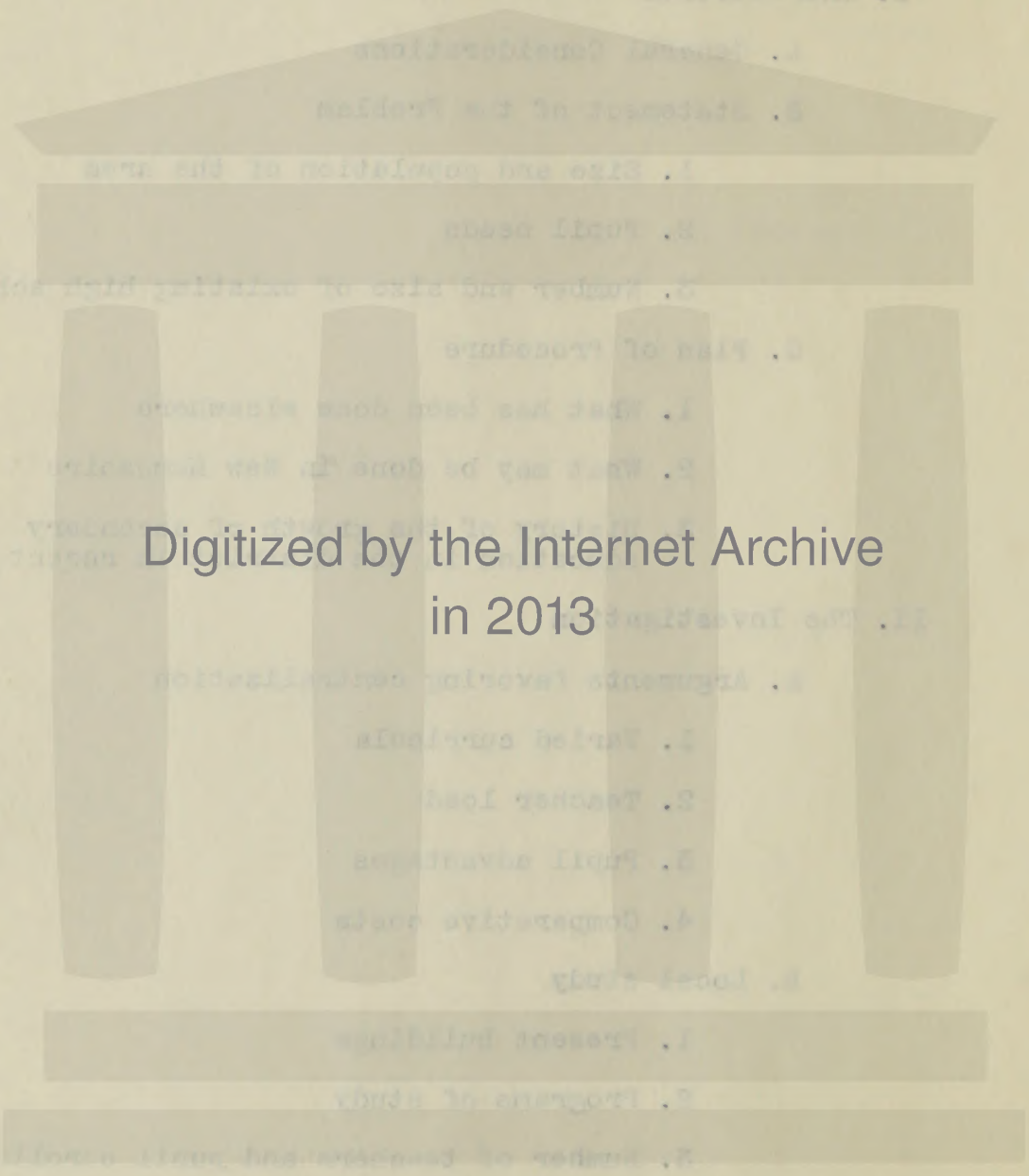

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III. Conclusion

IV. Suggested Reorganization.

THE CENTRALIZATION OF SECONDARY EDUCATION IN CERTAIN SUPERVISORY UNIONS IN NEW HAMPSHIRE.

I

INTRODUCTION

General Considerations

The general tendency, during recent years, toward the consolidation of small school units and the apparent success of these consolidations has prompted this investigation.

It is to be admitted that there are serious limitations in the offerings of the small high schools and that equalization of educational opportunity can never be realized as long as there exists such a wide variance of advantages among the different high schools of any given state. Educational advantages of the rural districts should be made to approximate, as closely as possible, those of the city. To emphasize the existent disparity in the advantages offered the urban dweller in comparison to those offered the pupil living in the country, the following list of limitations of the small high school is presented. Undoubtedly there are other limitations existent in particular high schools, and some of those listed are not in evidence in other schools, but the most ardent advocate of the small local high school must admit that this list is applicable in general. Consideration of such a list of generally accepted

limitations should make for a closer scrutiny of local schools in an effort to discover how many of them are applicable to the local institutions.

Limitations of the Small High School *

1. Less experienced teachers
2. Teaching load greater
    a. Number of classes daily
    b. Number of different daily preparations
    c. Number of different subjects taught
    d. Number of subjects taught in fields in which the teacher is poorly trained.
3. Equipment inferior
    a. Gymnasiums and auditoriums inadequate or lacking.
    b. Science, shop, and library equipment inadequate or inferior
4. Opportunities for extra-curricular activities limited
    a. Due to lack of numbers of pupils
    b. Inadequacy of financial support
5. Curricular offerings meager
    a. Less opportunity for exploration and satisfying different pupil needs and interests
6. Per pupil cost higher

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*Douglas, H. L. "Organization and Administration of Secondary Schools" p.14. Ginn & Co. 1932.

Statement of the Problem

In an endeavour to show what might be accomplished in the way of providing secondary schools that would more closely adhere to the nine major features of school practice, as recommended by the United States Office of Education, through the medium of some form of centralization for several existing high schools, this study was undertaken. The investigation will endeavour to compare the local high schools one to another in the light of these nine features.

Nine Major Features of School Practice *

1. Admission and promotion of pupils.
2. Arrangement of instruction, in terms of departmentalization, the size of classes, the length of school sessions, the use of standardized tests, and the adoption of special schemes which make possible direct attention to individual differences.
3. Scope and arrangement (but not the detailed content) of the program of studies.
4. Scope and arrangement (but not the detailed content) of the program of extra-curricular activities.
5. Schools' provision for vocational and educational guidance of its pupils.

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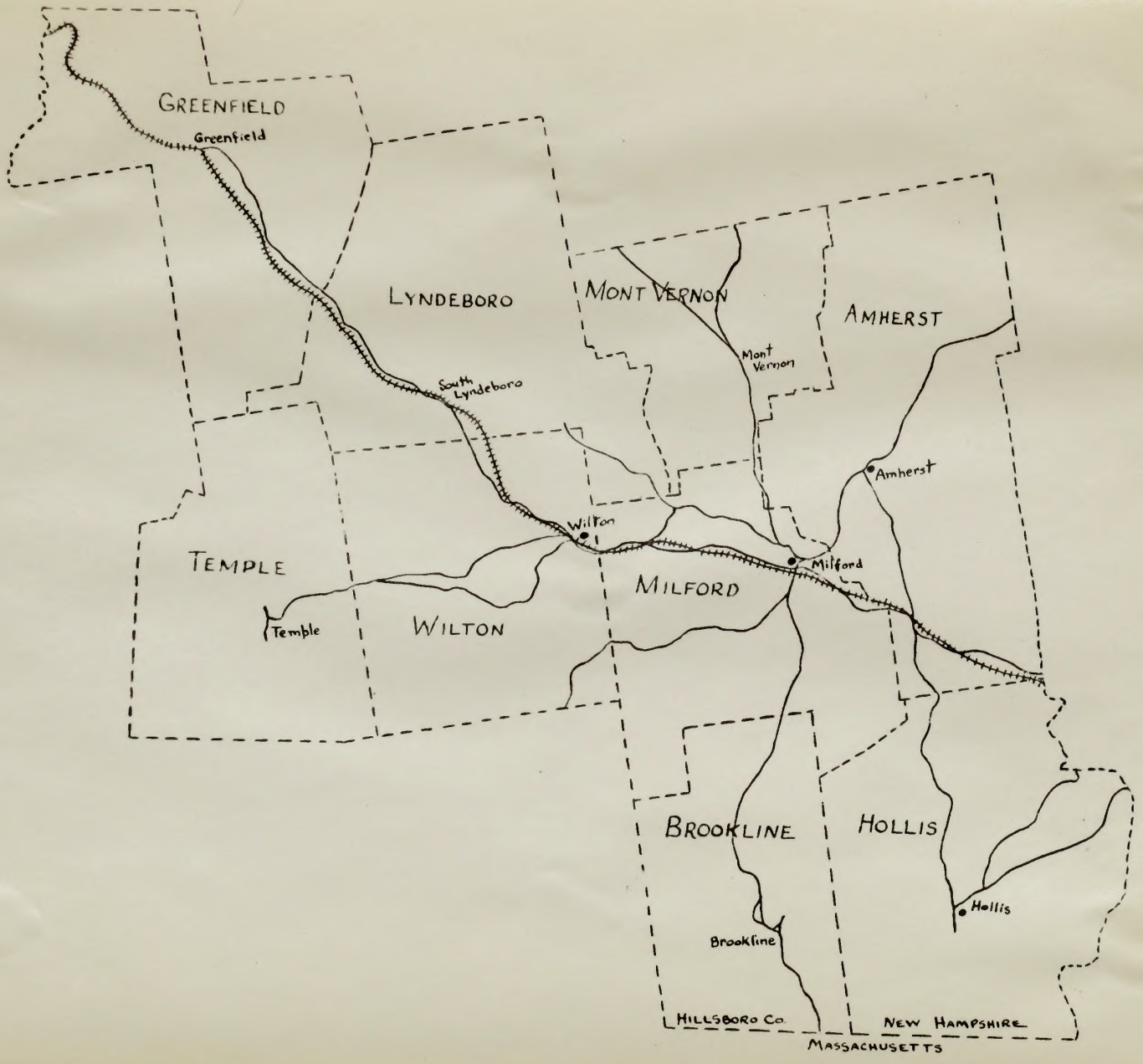
* Keesecker, W. W., & Sewell, F. C., "The Reorganization of Secondary Education" Bull. 17, Monograph #9, 1933, U. S. Dept. of the Interior, Office of Education, Washington, D. C.

6. Provisions for the articulation of the school with other school units.
7. The composition of the teaching staff.
8. Arrangements for the supervision of instruction.
9. The school's housing and equipment.

In an effort of this kind it is a common error to take for a proving ground an area in which all of the possible shortages in secondary education exist. In order to avoid this pitfall, the localities examined in this work are such that the educational opportunities are of a higher standard than is sometimes encountered in localities comparable in size, taxable property and population. If the results of this investigation show that improvement can be made in such a section, that the costs of the improved educational facilities will not be excessive, that the value of the better education even though slightly increasing the cost is true economy, then the findings should be applicable, at least in part, to those sections where secondary education is hampered by all of the limitations on page two.

Size and Population of the Area

The New Hampshire towns investigated are as follows: Amherst, Brookline, Greenfield, Hollis, Lyndeborough, Milford, Mont Vernon, Temple, and Wilton. This group of adjoining towns is in Hillsborough County and is bounded on the south by the State of Massachusetts. See map on page 7. In respect to the state organization of


GREENFIELD
Greenfield
LYNDEBORO
South Lyndeboro
MONT VERNON
Mont Vernon
AMHERST
Amherst
Wilton
Milford
TEMPLE
Temple
WILTON
MILFORD
BROOKLINE
Brookline
HOLLIS
Hollis
HILLSBORO Co.
NEW HAMPSHIRE
MASSACHUSETTS

school districts it should be noted that all of these towns lie in Supervisory Unions #40 and #63. In area these towns comprise approximately one fourth of the area of the county. Exclusive of the two cities, Manchester and Nashua, these towns constitute about one-third of the population of the county. The accompanying table gives data concerning the size of towns, the population according to the United States Census reports of 1930, and the school census as reported in the school census reports of October 1934.

Local Statistics

Town	Area Sq. Mi.	Population 1930	School Pop. * 1934
Amherst	34.7	1,115	205
Brookline	20.0	511	115
Greenfield	26.8	394	63
Hollis	31.5	879	177
Lyndeborough	29.8	399	91
Milford	25.0	4,068	696
Mont Vernon	16.3	302	45
Temple	23.3	239	57
Wilton	25.5	1,724	314

*Includes all children between the ages of 5 and 16.

From the standpoint of pupil transportation it is significant that all these towns are served by all-weather highways, maintained by the state highway department--a fact that insures passability at all times. The towns of Milford, Wilton, Lyndeborough, and Greenfield have the added transportation facilities of the Boston & Maine Railroad.

Pupil Needs

Any school system to be effective must do its utmost to meet the needs of its pupils and in explanation of the needs of the rural school the following excerpt from an article * by Morris R. Mitchell is indicative of what should be the attitude in regard to these small schools. "There are two opposing points of view with reference to the aims of the rural school. The one regards rural children as a class, presumes that their environment determines their probable future and argues that for their own good and that of society they should be directly prepared for such a future. The other view maintains that one must not regard rural children as rural children at all, but rather as individuals having individual capacities and the right to the fullest development of those capacities in whatever direction the child's

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*Mitchell, Morris R.,"Progressive Methods in a Small High School." Economical Enrichment of the Small Secondary School Curriculum, p.23. The Dept. of Rural Education. Nat. Ed. Assoc. Feb. 1934.

interests and abilities may take. -------The truth lies in merging and balancing these two views. The goal should be a perfectly balanced curriculum, balanced as among home and school and community learnings."

Being guided by this advice, it is first important that the life activities in the communities where the children live be examined. Whether or not the students of a high school remain in the community where they were born as they progress into adult life can not be controlled by the school organization, but it should be the duty of this organization to know what the means are of earning a livelihood in the vicinity and to attempt to fit their students for a place therein. The available opportunities for gainful occupation in the several towns in question are found below.

Activities of the Different Towns

Amherst:	farming, poultry-raising.
Brookline:	farming.
Greenfield:	farming, fruit-growing.
Hollis:	farming, poultry-raising.
Lyndeborough:	farming, fruit-growing.
Milford:	large granite industry, including quarries and stone-cutting sheds; two furniture factories; two textile mills; four sawmills; a thriving business center including eight garages, four

restaurants, six barber shops, five hair-dressing parlors, four grain dealers, two fuel dealers, one bank, forty or more retail stores of different sorts; in addition there is a large farming area.

Mont Vernon: fruit-growing, poultry-raising.

Temple: farming, fruit-growing.

Wilton: sawmill, lumber-finishing mill; textile mill; apple packing establishment (seasonal occupation only); large retail center, one bank, large fruit-growing and farming area.

It can readily be seen that there are four main opportunities for employment, the stone industry, the textile mills, the furniture factories, and the general retail business. The farming, poultry-raising and fruit-growing activities are, in the main, one-man undertakings carried on by resident property owners.

In considering pupil needs one must take into his investigation the necessity of offering such courses of instruction as will meet the demands of higher institutions of learning with reference to entrance. It suffices in this instance to be aware of the fact that, in ever increasing numbers, there are graduates of all these high schools entering the state normal schools, the state university, and other post-secondary

institutions.*

Education for better citizenship is in universal demand. There is a real opportunity to show improvement in this direction in any small high school. The student in the small school necessarily comes from communities small in population, his chances of any practice in the manner of conduct in large group relationships are handicapped by his environment. The schools should endeavour to enlighten their pupils about things political, economical, and social. There is a saying which, although not so true to-day as it was formerly, is still too true to reflect any pride upon the rural schools. "You can take the boy out of the country but you can't take the country out of the boy." It should be the duty of the school system of any community to combat the narrowing influences of the rural or small-town environment.

Number and Size of Existing High Schools

Four of the ten towns considered in this investigation, Amherst, Hollis, Milford, and Wilton, are maintaining the traditional four year high schools. The work of grades seven and eight is somewhat departmentalized but the school systems although organized on the 6-2-4 plan can not be said to be conducting any junior high schools. To give an accurate statement of

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* Biennial Reports, State Board of Education, Concord, New Hampshire 1922-1934.

the present size of the high schools as well as what may be expected in the near future, the school enrollment of the different towns, the number of teachers, and the type of school organization is set forth in the following table.

School Year 1934-1935

Town	Org.	Grades I-VI Number of Pupils	Grades I-VI Number of Teachers	Grades VII-VIII Number of Pup.	Grades VII-VIII Number of Tea.	Grades IX-XII Number of Pup.	Grades IX-XII Number of Tea.
Amherst	6-2-4	105	4	28	1	47	3
Brookline	6-2	62	2	17	1	---	---
Greenfield*	4-4	28	1	20	1	---	---
Hollis	6-2-4	90	3	30	1	47	3
Lyndeborough**	8	89	4	---	---	---	---
Milford	6-2-4	427	15	149	5	232	11
Mont Vernon#	6	25	1	---	---	---	---
Temple##	4-4	15	1	23	1	---	---
Wilton	6-2-4	201	6	57	2	133	5

* Greenfield has two rooms Grades I-IV 28 pupils-one teacher
Grades V-VIII 20 pupils-one teacher

** Lyndeborough has four schools; each contains Grades I-VIII and one teacher.

Pupils in Grades VII-VIII attend school in Milford

Temple has two rooms Grades I-IV 15 pupils-one teacher
Grades V-VIII 23 pupils-one teacher.

Secondary school pupils from Brookline, Greenfield, and Mont Vernon, attend the Milford High School; pupils from Lyndeborough and Temple attend the Wilton High School. Tuition costs for these pupils are paid by the school districts in which they reside, and unless under fourteen years of age they furnish their own transportation.

Consolidation Trends Elsewhere

In recent years, particularly during the past decade, there has been a decided movement toward the consolidation of schools throughout the United States. This consolidation has taken place especially in the field of elementary education. The following information,* gleaned from a national survey of the trends in consolidation of schools, is indicative of the degree to which this tendency has developed.

The average annual decrease in the number of one room schools during the past sixteen years has been 3,223, and the percentage of decrease has remained almost constant, year after year. This consolidation has naturally resulted in a tremendous increase in the number of pupils transported to school, most of which has been done at

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*Blose, David T. "Consolidation of Schools and Transportation of Pupils 1931-1932." Circular #132 U. S. Department of the Interior, Office of Education, Washington, D. C. Feb. 1934.

public expense. Figures available for the forty-eight states and the District of Columbia show that 1,902,826 pupils were transported at public expense in 1930 and 2,342,566 in 1932; an increase of twenty-three per cent for the two years. It is significant, however, that in this same two-year period there was a reduction in the transportation cost per pupil of about $4.00 per year. The actual per pupil cost in the states reporting the number transported in the school year 1929-1930 was $28.81, in 1931-1932 it was $24.49. The elimination of the open country one room school has afforded a better type of education for the pupils. The total cost of instruction under some forms of consolidation has increased, while in other instances there have been material savings. This refers to an actual saving in taxable return dollars and does not take into consideration the betterment in education that has been purchased with these same dollars.

To a lesser degree, but at the same time in sizeable numbers, small rural high schools have combined into larger units. This tendency toward centralization of small secondary schools has been fostered primarily by a desire to furnish better education to greater numbers of the rural and small community populations. In very recent years, when everyone has felt the increasing pressure of the tax burden, consolidation of schools has been looked upon as one of the possibilities through which assessments might be reduced.

Acknowledging that certain inadequacies which might be avoided are existent in many of the small secondary schools, the departments of education in many states have for several years past, been making investigations to see whether or not consolidation plans are feasible. The State of Vermont has, at the present time, a commission making a state-wide survey with this end in view. In New Jersey, the state educational survey commission recommended in 1929, that no high school of fewer than two hundred pupils be added to the list of schools approved by the state department of education. Some of the western states maintain consolidated secondary schools so far distant from the homes of some of the pupils that daily travel between school and home is an impossibility. They have included in their school plant facilities for furnishing board and room to these pupils during the school week. In other sections secondary schools have been erected which accommodate an entire county, with provisions for daily transportation of pupils. Many counties operating such systems own the buses used in transportation while others contract with privately owned transportation companies to do this work.

Legal provisions for centralization in New Hampshire

As early as 1845 it was realized that the development of secondary education was desirable, and the state

legislature of that year enacted the following law.*

> "Any two or more contiguous school districts in any town or towns in the State may associate together and form a union for the purpose of establishing and maintaining a high school or high schools for the instruction of the older and more advanced scholars belonging to the several associated districts; but no vote of any district shall be valid unless passed by two-thirds of the voters present at a legal meeting called and holden for that purpose."

Whereas the wording of the above law has been changed, and certain additions made to it, during the intervening years, the original intent of the law is still embodied in the latest revision of the school laws of the state. The latest revision of the laws was in 1919 and an avenue of escape from the limitations of the small high school was held open in Chapter 119 of the Laws of New Hampshire--Relating to Public Schools, which reads in part as follows:

> Sec. 20. Two or more adjoining districts in the same or different towns may make contracts with each other for establishing and maintaining jointly a high or other public school for the benefit of their pupils, and may raise and

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* Laws of New Hampshire--Laws of 1845; Ch.220, Sec. 1.

appropriate money to carry the contracts into effect; and their school boards, acting jointly or otherwise, shall have such authority and perform such duties in relation to the schools so maintained as may be provided for in the contracts.

Sec. 21. Any school district may make a contract with an academy, high school, or other literary institution located in this or, when distance or transportation facilities make it necessary, in another state, and raise and appropriate money to carry the contract into effect. If the contract is approved by the state board the school with which it is made shall be deemed a high school maintained by the district.

Sec. 22. By the term high school, academy or literary institution is intended a school having at least one course of four years, properly equipped, teaching such subjects as are required for admission to colleges, technical schools, and normal schools, including reasonable instruction in the consitution of this state and the United States, and approved as a high school by the state board. This board may approve a school maintaining any part of said course for the part so maintained.

Though this law has been in effect for many years there has, as yet, been no consolidation of high schools within the state. This condition is undoubtedly due to the fact that plans for consolidation usually meet opposition in the form of local pride, inter-community jealousies, and non-educational interests. Secondary education, as designated in the school law of 1845, is for "the older and more advanced scholars" of any state; the costs of it are willingly assumed by the taxpayers in order to afford these students educational opportunities denied their parents. Yet these same willing taxpayers often combat any attempt to improve the conditions as they exist to-day. Persons vitally interested in the future of their state should be broad-minded enough to surmount such petty, small-town prejudices in favor of whatever improvements may be attained in the way of educational betterments.

Growth of Secondary Education in this Region

While the increase of secondary school enrollment in this region does not begin to approach the tremendous increases found in many urban centers of population it is still large enough to be significant. The table below gives the total enrollment for grades IX to XII in the years 1923-1924 and 1934-1935 in the towns maintaining high schools. These enrollments include pupils attending school as tuition paying pupils from those towns in which there are no high schools.

Enrollment Statistics

Town	1923-1924	1934-1935	Increase Actual	Percentage Increase
Amherst	27	47	20	74%
Hollis	26	47	21	81%
Milford	200	232	32	16%
Wilton	73	133	60	82%

There is the sizeable increase, in the combined enrollment of the four schools, of 41%.

The accompanying graph shows that even larger increases in enrollment occurred in certain years. The graph shows the annual increases in the combined enrollments of the four high schools for the twelve years from 1923 to 1935.*

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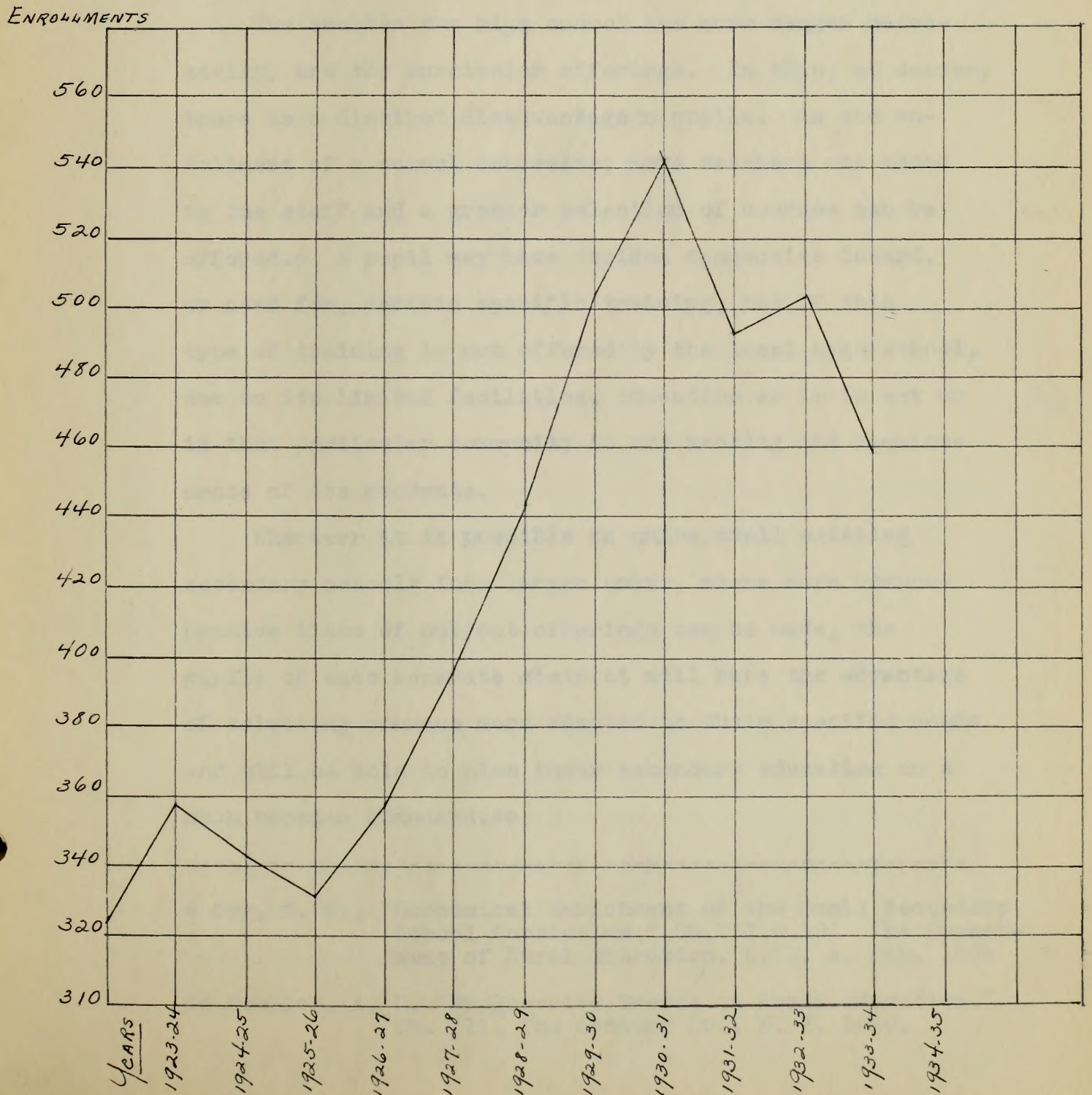
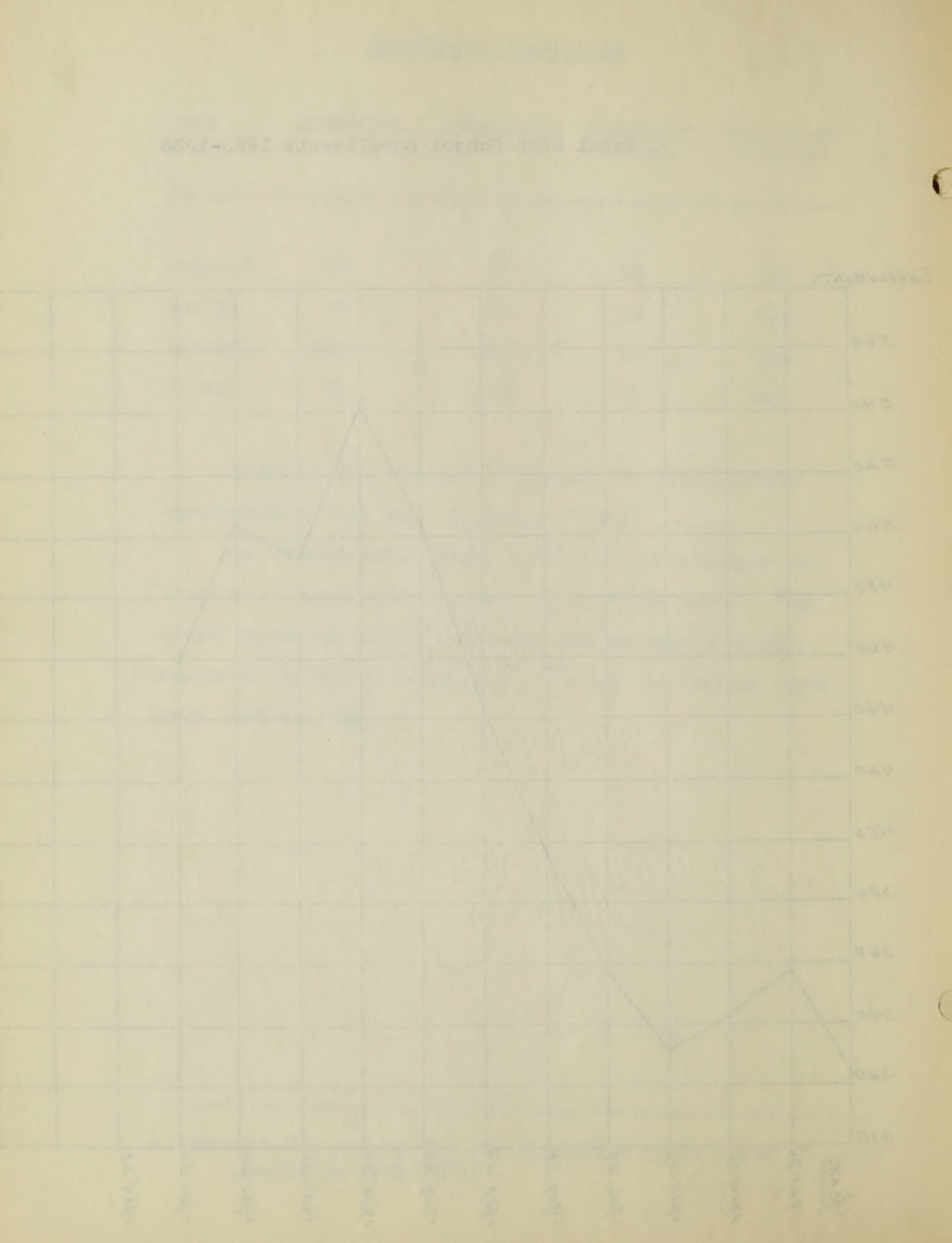
* Biennial Reports of the New Hampshire State Board of Education 1922-1934.

Total High School Enrollments 1923-1935





II

CONSIDERATIONS FAVORABLE TO SCHOOL CONSOLIDATION

Varied Curricula.

The smaller the high school the more meager necessarily, are the curricular offerings. In this, of course, there is a distinct disadvantage to pupils. As the enrollment of a school increases, more teachers are added to the staff and a greater selection of courses can be offered.* A pupil may have decided tendencies toward, or need for, certain specific training, but if this type of training is not offered by the local high school, due to its limited facilities, education as it is set up in that particular community is not meeting the requirements of its students.

Wherever it is possible to unite small existing secondary schools into larger units, where more comprehensive lists of subject offerings can be made, the pupils of each separate district will have the advantage of selecting courses more adapted to their specific needs and will be able to plan their secondary education on a much broader standard.**

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* Cyr, F. W., "Economical Enrichment of the Small Secondary School Curriculum." Ch.III.p.19. The Department of Rural Education. N. E. A. Feb. 1934

** Mueller, A. D. "Progressive Trends in Rural Education." Ch. III. The Century Co., N. Y. 1926.

Evidence sustaining this contention is clearly shown by existing conditions in the area under observation in this particular study. The two smallest high schools have very limited offerings under a single curriculum system. Although an attempt is made to broaden the four year course of study by alternating several of the subjects every other year, the program of study still remains rather meager. The next larger school, though offering more courses is again a single curriculum school. The largest school in the area has four curriculums; academic, commercial, general, and mechanic arts. It is significant that high schools in Claremont and Newport, New Hampshire, with enrollments comparable to the combined student enrollment of the four high schools in this area, each have five curriculums. Judging from actual conditions in high schools of varying numbers it is safe to conclude that as any school increases in the number of its students the more broadened will the program of studies become.

Teacher load, and teacher-pupil ratios

There is a widely fluctuating pupil-teacher ratio in schools of various sizes. There is also a wide fluctuation in the number of subject preparations per teacher in schools varying in size. A low per pupil ratio will lead to high per pupil costs even though low salaries are paid to the teachers in the smaller schools, and the curricular offerings are limited. Substantiation for this observation on widely fluctuating

pupil-teacher ratios is found in the data compiled in thirty-one states by the National Survey of School Finance, for the school year 1929-1930.*

The findings of this survey were briefly as follows. The ratio rises from 13.2 pupils per teacher in schools of twenty pupils to 24 in schools of five hundred. The ratio rises rapidly until enrollments of eighty are reached and holds fairly steady around 20 and 21 until it reaches 180. Between 180 and 200 there is a sharp rise until it reaches 23 pupils per teacher. From 200 to 500 the ratio remains fairly constant at about 23 pupils per teacher. This fact warrants the assertion that the factor of size in schools of over 200 does not greatly affect this ratio. Considering teachers of the same quality, it may readily be seen what effect this ratio will have on the per-pupil costs for instruction by comparing pupil-teacher ratios of 13 and 23 respectively.

In a recent survey made in the state of Iowa, R. C. Williams reported: "our rural ungraded (high) schools enroll 29 percent of the entire state enrollment but employ 38 percent of the teachers. Comparatively our first class cities teach 23 percent of the state's

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*"Economical Enrichment of the Small Secondary-School Curriculum" Department of Rural Education, National Ed. Assoc. Feb. 1924. Ch. XX.

pupils with but 16 percent of our teachers." * Whereas the conditions brought out in the 1929 survey mentioned above probably do not entirely obtain to-day due to the general practice of strictest economy in school administration, the fact still remains that the pupil-teacher ratio in the schools considered in this study, varied in the school year 1934-1935, from 16 to 1 in the smallest of the four schools to 26 to 1 in the next to the largest.

While the low pupil-teacher ratio in small schools has a tendency to lighten the teaching load, in general it may be assumed that this is more than counterbalanced by a second factor, the large number of daily subject preparations per teacher. In a large school where a teacher would have more than one section of any particular class subject, that teacher would, of course, have fewer daily preparations to make. A chart prepared under the direction of Doctor Wayne W. Super, of the Research Division, New York State Education Department, shows in graphical form the median number of subject preparations per teacher in small high schools of New York State in the school year 1933-1934. For the purpose of this study it is sufficient to note that the number of daily preparations in schools from 250 to 275 it is 4.0. This means that the teacher in one group

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* Williams, R. C. "Educational Programs of Smaller Graded and High Schools." Dept. of Public Instruction. Research Bulletin No. 14 Des Moines, Iowa. June 1933.

must make 1.7 more daily preparations than the teacher in the larger school. Data compiled from the small high schools in Kansas produced a similar curve to that of Doctor Super.*

Considering the teaching load from the standpoint of the actual number of pupils instructed during the week regardless of pupil-teacher ratio it is safe to say that the general conception of the maximum load which can be undertaken with a sufficient degree of efficiency is 625 pupil-hours per week based upon class periods of approximately 45 minutes. This means that a teacher can be expected to teach five periods a day and that each class would have 25 pupils.** This estimate could undoubtedly be raised somewhat in cases where a teacher would have a minimum number of different class preparations to make. In a centralized school system it would appear that a more even distribution of teaching loads could be effected. In the case of the schools under consideration in this investigation there is no semblance of constancy in this respect. The lightest load is 315 pupil hours and the heaviest is 880. Consider also in this regard that several of the teachers in these four schools are teaching classes below grade IX. There is absolutely no doubt that an improvement in this condition would result from some form of consolidation.

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* "Economical Enrichment of the Small Secondary-School Curriculum" Dept. Rural Education. Nat. Ed. Assoc. p. 21, Feb. 1934.

** Davis, J.B. & Kimball, E.F. "A Study of the Cost of Secondary Education in Connecticut" p.22-23. State Board of Education, Hartford, Connecticut. 1924.

Pupil Advantages

In considering any plans for the consolidation of schools one fact is of supreme importance, namely the advantages that can be expected from the consolidation in terms of its pupils' needs. Any plan that can show no advantages for its pupils has no excuse for further study. In this connection it is advisable to investigate and examine the advantages that would be possible in this particular study, being guided by the general advantages that have been experienced in large schools elsewhere. The ever increasing number of consolidations that are taking place in elementary schools and the trend toward the same system in secondary schools must have taken into consideration the educational advantages rendered the pupils. *

It is the general consensus of opinion that the larger the school enrollment the more scholastic advantages will it be possible to offer to the students. ** In support of this general idea as to the benefits of large schools to its pupils the following information from a survey made of the students in Purdue University in 1930 is offered.*** The report of this survey stated

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* Blose, David T. "Consolidation of Schools and Transportation of Pupils 1931-1932." Circular #132. U.S. Dept. of Interior, Office of Education, Washington, D.C. February, 1934.

** Ferris, Emery N."Rural School Survey of New York State." W.F.Fell Co.,Printers,Philadelphia,1922.

*** Remmers, H.H. "Distinguished Students--What They Are And Why" Bulletin of Purdue University. Vol. XXXI.No. 2. 34:35 Oct.1930.

that one of the reasons (among many others) for the appearance of distinguished students in college was "coming from a large, long term city high school." In the table which follows it is shown that nearly three-fourths of the distinguished students came from the large high schools while only 60.7 percent of the non-distinguished students came from this type of school. The figures for the small high school are, of course, the exact reverse.

Percentages of Distinguished and Non-Distinguished Students Drawn from Various Size High Schools.

	Large 200--5,299	Small 0---199
Distinguished	71.5	28.5
Non-Distinguished	60.7	39.3
Difference	10.8	10.8
Difference / P. E. Difference	3.86	3.86

Although this survey was made upon a relatively small group and in one section of the country only, the fact still remains that the table above shows that there was a decided advantage in favor of the large school and the conclusion might well be drawn that similar evidence could be found elsewhere.

How a better type of education may be afforded requires the examination of specific school activities which have a direct bearing upon the achievement of the pupils. For many years, American educational institutions constructed their programs of study and practically

said to their pupils "take it or leave it." Eventually there came pressure from the outside; the public discovered that it was paying for this education and demanded that more subjects be added to these antiquated programs of study. Concessions were made and new courses were instituted to attract other types of pupils.* The result of this gradual change in educational policy is that in the large high school of today there is a highly diversified list of subject matter from which the students may make their selections.** On the other hand, a small school enrollment tends notably to prevent any variations in school practices.*** The child with very definite abilities or real life needs for some of the vocational courses or some special training has to be content with the formal classical course of his small local high school. Through consolidation, enrollments more comparable to those of the large city high school become an actuality and with this increased enrollment broader curricular offerings are made possible.

In a large school unit there is available the means of better provision for individual differences. There

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* "Report of the Committee on Guidance" Appointed by the Educational Council of New Hampshire. State Board of Education, Concord, N. H. August 1933.

** Ferris, E. N.--Gaumnitz, W. H.--Brammel P. R. Monograph 6. p. 221

*** Koos L. V. and staff. "National Survey of Secondary Education" Bulletin 17, Monograph 1, p. 58. 1933. U. S. Gov't Printing Office, Washington, D. C.

are many differences in pupils and many ways to provide for these differences but it is safe to say, that in about one way only, can the small school compete with the large school, namely, that the teacher of small classes will have more time to devote to individualized instruction. A very important part of the work of the recent National Survey of Secondary Education was the investigation of what was being done in the various schools to provide for individual differences. The findings were to the effect that "homogeneous grouping, special classes for the gifted and the slow and plans characterized by the unit assignment were found to be the three core elements in a typically successful program to provide for individual differences." * The consolidated school through its increased enrollment would be better adapted to put into practice some of these "three core elements" than is the small local high school.

Another need in the educational system of to-day which is sending its graduates out into a world of rapidly changing economic, political, and social standards, is the need for emphasis upon social-civic training. The larger the school that a pupil attends the more training that pupil will, of necessity, receive by participating in large group activities. The provincialism of the small town and the small school will tend to disappear, as the

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*Koos, L. V. and staff. "National Survey of Secondary Education" Bull. 17, Monograph 1, p.4. U.S. Gov't Printing Office, Washington, D.C. 1933.

individual comes to realize that things are not always done as they are done in his local community. Experience is the best teacher and what better teaching in the art of better living together than the actual experience of being a member of a large school group. In this social-civic training one of the outstanding aims is that of toning down prejudices. The more contacts of the right sort that a person makes with other persons of different racial origin and religious creeds just so much more do ancient biases tend to disappear. The elimination of these prevalent prejudices is an Utopian dream but the large schools of this country certainly can do much in the way of toning them down.

Closely related to the problem of training for better citizenship is that phase of school life known as the extra-curricular activities. In the small schools these activities are limited from lack of numbers to participate.* Improvement in this respect could be expected from consolidation of small secondary schools.

A consolidated school should be able to offer better facilities in the way of buildings, i.e., library, laboratory and shop equipment; gymnasiums and recreational equipment; auditoriums and special rooms for instructional purposes.**

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* Douglass H. L.,"Organization and Administration of Secondary School" p.14,Ginn & Co. 1932.

** "Smaller Secondary Schools" S.&S. Vol. 41 #1053, p. 285. March 2,1935.

The withdrawal from school of large numbers of students has always been a major administrative problem. It was found in the National Survey of Secondary Education that the so-called selected schools investigated retained their students much better than those schools in the unselected group. This finding is very relevant to the problem of school consolidation inasmuch as the selected schools referred to were in large communities and more often in consolidated districts.* This can be used as a very strong argument in favor of secondary school consolidations.

More and more leaders in education are coming to realize the necessity and the value of organized programs of guidance. Guidance programs became a necessity when it was discovered that the existing program of education did not provide adequately for certain problems met by students. Many students have an inaccurate conception of their abilities and without some form of guidance may easily formulate educational plans not in harmony with their abilities. In many cases there are no definite plans for after school life. These and many other weaknesses in school administration can be remedied by organized programs of guidance.**

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* Ferris,E.N.,--Gaumnitz,W.H.,--Brammel,P.R.,"National Survey of Secondary Education" Bull.17, Monograph 6,p.221, U.S.Gov't Printing Office, Washington,D.C. 1933

** Kefauver N. and Hand, H.C., "An appraisal of the Programs of Guidance in Secondary Schools" Proceedings of the 17th Annual Meeting of the Department of Secondary School Principals of the N.E.A. Bull.45, pp.283-292.Minneapolis,Minn. Mar. 1933.

It was found that in over half of the schools investigated by the recent survey of secondary education there was no organized plan for guidance.* The Educational Council of New Hampshire in 1933 established a committee to study the problem of guidance and to form a program for the use of the New Hampshire schools. A tentative draft of this program is now in the hands of every high school principal and school superintendent in the state, yet in the schools of this particular study there is as yet no attempt to introduce any organized guidance program. Those responsible probably feel that the principal who is now doing about all of the guidance work for these schools is the best able to handle this problem. If these schools were consolidated into a larger unit there undoubtedly would be a new guidance set-up with some greater degree of efficiency in the organization thereof.

Comparative Costs

The comparisons of costs as here treated, are based upon the cost of high school instruction for the school year 1933-1934 in the public senior high schools of New Hampshire. The instructional costs per pupil for each senior high school in the state have been computed

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* Ferris E.N.--Gaumnitz W.H.--Brammel P.R. "National Survey of Secondary Education"Bull. 17, Monograph 6,pp.184-192. U.S.Gov't Printing Office, Washington D. C. 1933

by the State Board of Education and the figures thus compiled are used here.

Of the 83 senior high schools in the state, 43 have an average daily attendance of 100 or less; 22 have an average daily attendance of 200 or less; approximately two-thirds of these schools would be classified as small high schools. In some of the small schools, costs are very low and in others they are extremely high; this may be due to various reasons such as difference in curricular offerings, difference in the number of teachers employed, difference in salary schedules and other reasons. Although costs also vary among larger schools comparable in size one to another the costs do not show such decided variances as do the schools enrolling 100 or fewer pupils.

The average cost per pupil for the entire state for the school year 1933-1934 was $73.81; the highest cost was $213.56; the lowest cost was $52.58.* The chart following shows the costs in all of the high schools in New Hampshire classified according to average daily attendance in units of 100.

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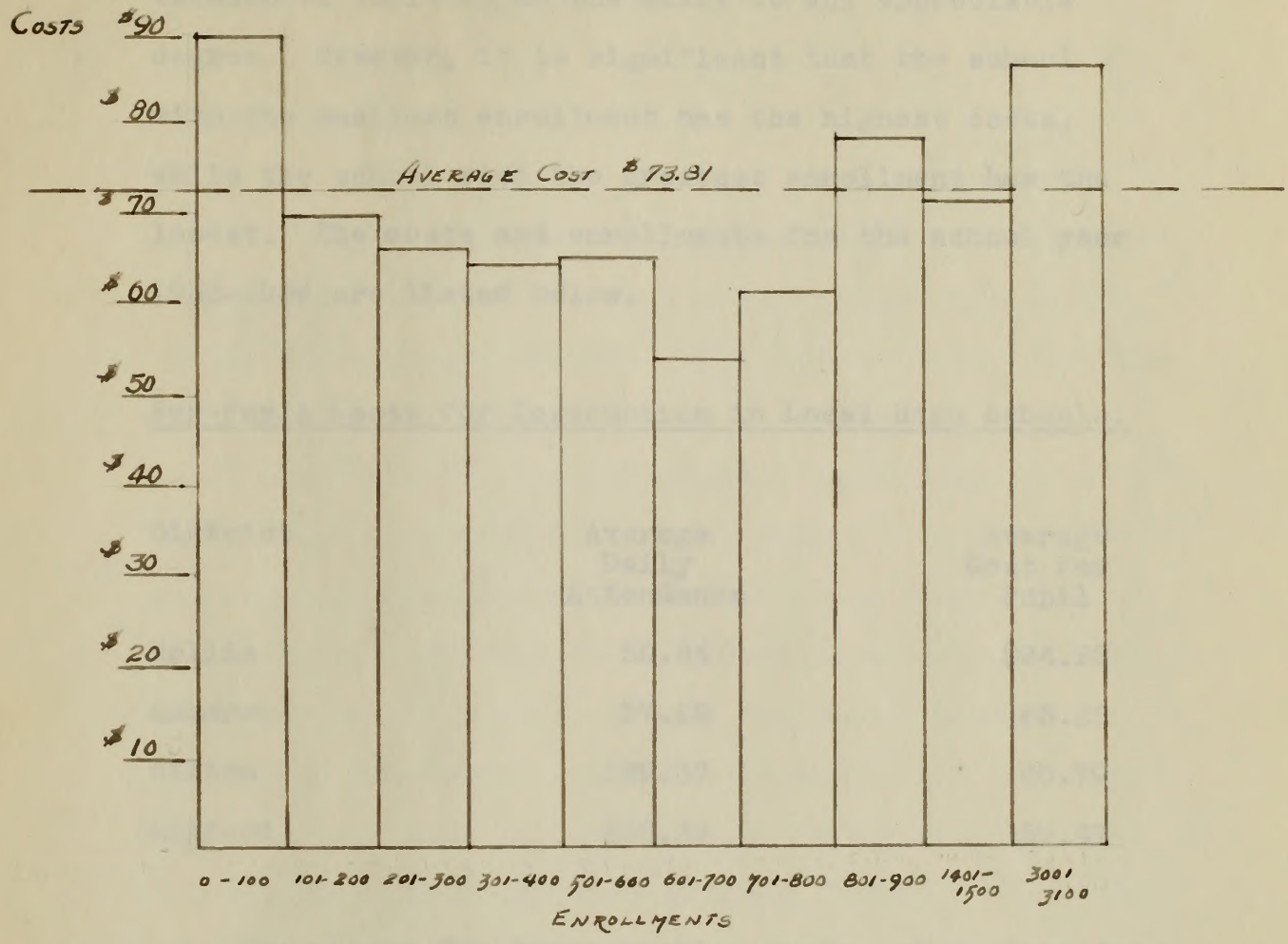
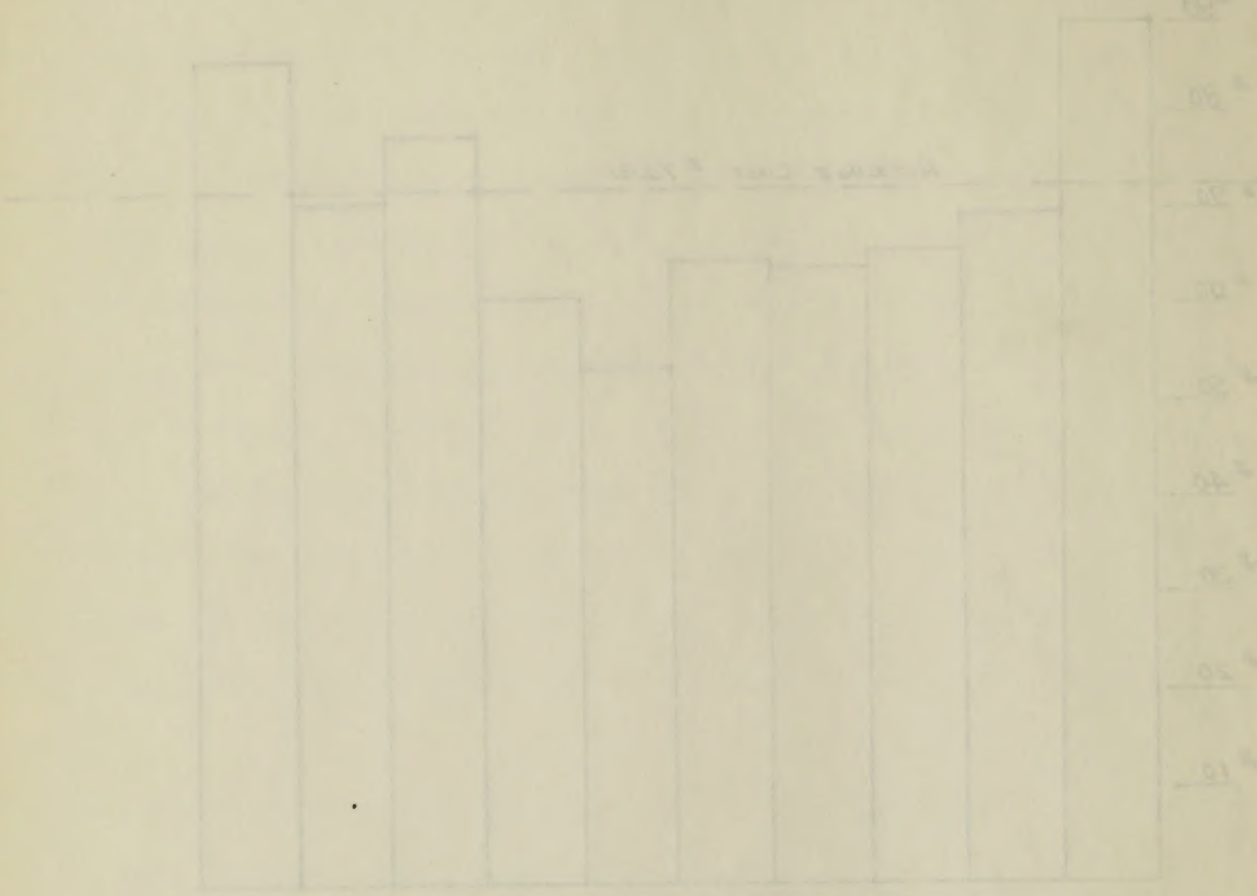
* Cost of High School Instruction, 1933-1934. New Hampshire State Board of Education.

Graph Showing Average Per-Pupil Costs for Instruction in the Public Senior High Schools of New Hampshire, 1933-1934.



The above chart shows that there is a decrease in instructional costs as size of enrollment approaches 600, from which point they tend to rise again. The experience of the State Of New Hampshire from the viewpoint of costs would show that a considerable saving might be made by the centralization of high schools in those areas where other obstacles would not make it impractical.



The costs in the several high school with which this study is concerned do not conform to the cost tendencies depicted on the chart to any appreciable degree. However, it is significant that the school with the smallest enrollment has the highest costs, while the school with the greatest enrollment has the lowest. The costs and enrollments for the school year 1933-1934 are listed below.

Per-Pupil Costs for Instruction in Local High Schools.

District	Average Daily Attendance	Average Cost Per Pupil
Hollis	50.84	$94.28
Amherst	57.28	63.22
Wilton	129.37	60.79
Milford	238.39	59.47

The reason for these varying costs, other than from the standpoint of pupil enrollment is due to various causes. An examination of the programs of study of these schools found in the following chapter shows that those costs that are lower than might be expected can be traced in a large degree to the small number of subjects offered, combined with low salary schedules.

III

LOCAL STUDY

Present Buildings

In considering secondary education for this area in relation to the criteria set up on page 3, a survey of the housing and equipment of the various high schools will be made for each of the four schools.

1. Amherst. The school building in Amherst houses all of the school population for grades I to XII. For high school purposes there are available three class rooms and a large central room used as a study hall and assembly hall. There is also a very small science laboratory provided. The space available for the high school is adequate for the present enrollment and for the meagre program of study offered. There is no gymnasium or other recreational equipment. The playground area is very limited and hardly suffices for the needs of the elementary grades. Amherst is handicapped in all athletic ventures because of lack of school facilities and because neither halls nor fields suitable for athletic purposes may be rented by the school district.

2. Hollis. Building conditions in Hollis are very similar to those in Amherst, the one building houses the entire school population. The high school utilizes the second story of the building which is comprised of

four rooms. Hollis offers an agricultural course of study and a small shop in provided in the basement of the building where minor repairs to tools and equipment may be made. Here again the schbol provides neither gymnasium nor other recreational equipment. The school is better off however than the schbol in Amherst because during the winter the Town Hall may be used for basket ball by both the girls and the boys. This is the only athletic program that is attempted.

3. Milford. The Milford High School building is a three story brick structure. In the main part of the building there are ten class rooms, one large room used as a study and assembly hall, a large science laboratory and a domestic arts room. To the main building has been added a one story wing which houses the vocational departments. The first floor of the main building is used by grades seven and eight and the rest of the building is allotted to the senior high school. There is no gymnasium nor is the assembly hall of sufficient size to seat the whole school at one time. The school grounds cover approximately five acres on which there is a baseball field, a football field and a track. Indoor athletics are confined to basketball which is played in the Town Hall, a rather unsatisfactory arrangement for a school as big as the Milford High School.

When the wing mentioned above was built, the footings and foundations were constructed of sufficient strength so that if further additions to the school plant were ever necessary two additional stories could be built upon the

present structure. A two story addition would provide a gymnasium of adequate size and four additional class rooms. If enrollments should increase in such numbers as to demand even further additions to the plant there is ample space to add another wing similar to the one described above.

4. Wilton. The school plant at Wilton is a two story brick structure which houses the entire school population. There are five class rooms on each floor, a small science laboratory on the second floor and a small manual training room in the basement. In the rear of the school a separate building of one large room has recently been erected for use as an auditorium and a basketball court. This is an exceptionally fine building and is large enough to seat the entire school group. Recreational facilities in the way of athletic fields have been entirely lacking to date but the school district has recently acquired a four acre plot of ground adjacent to the school grounds which will be of ample size to provide the needed athletic fields.

By way of general remarks about the adequacy of the school plants in these four towns the following observations are made. All schools, while functioning as well as can be expected, are not large enough to handle any increases in enrollments that might arise and are really cramped for space in relation to their present numbers. Amherst is at present considering the construction of a new building and Wilton is considering

an addition to their present building. All the schools are inadequately furnished with athletic and recreational equipment. Libraries are very small, if they exist at all. Science and shop equipment should be improved in all of the schools. In each of the schools large numbers of pupils are required to carry their lunches and in none of the schools is there a suitable lunch-room provided.

Programs of Study

In this section, the programs of study of each of the high schools will be offered for examination. These programs are for the current school year 1934-1935 and do not show the complete offerings of those schools which practice alternation of courses in different years. They will be listed in order of the size of the school enrollments. Special names for courses will be changed so that courses of similar subject matter content will be similarly labeled.

Hollis

English IX
English X
English XI-XII

Latin X

French X
French XI

Algebra IX
Advanced Mathematics
Geometry

Chemistry

Agriculture IX-X
Agriculture XI-XII

U. S. History
Civics

Nursing and Physiology

Amherst

English IX
English X
English XI-XII

Latin X

French X
French XII

Algebra IX
Advanced Mathematics
Geometry

Biology

U. S. History
Civics
Economics ($\frac{1}{2}$ year)
Sociology ($\frac{1}{2}$ year)

Wilton

English IX
English X
English XI
English XII

Latin IX
Latin X
Latin XI-XII

French X
French XI
French XII

Algebra IX
Algebra X
Geometry
Advanced Mathematics

Chemistry
Physics

History IX
History X
U. S. History
Economics
Sociology

Mechanical Drawing IX
Mechanical Drawing X

Domestic Arts IX
Domestic Arts X
Domestic Arts XI
Domestic Arts XII

Milford

English IX
English X
English XI
English XII

Latin IX
Latin X
Latin XI-XII

French X
French XI
French XII

Algebra IX
Geometry
Advanced Mathematics

Physics
Biology

U. S. History
European History
History of Civilization
Civics
Economics XI
Economics XII
Sociology

Typewriting X
Typewriting XI
Typewriting XII
Shorthand XI
Shorthand XII
Bookkeeping X
Office Practices

Woodworking
Auto Mechanics XI
Auto Mechanics XII
Machine Shop

Nursing and Physiology
Home Economics

Orchestra ¼ point credit each year
Band ¼ point credit each year
Glee Club ¼ point credit each year
Theory of Music ¼ point credit each year

It may be readily seen from an examination of the preceding tables that one of the limitations of small high schools as stated by Douglas*, namely, meager curricular offerings, is applicable to the schools in this area. The small town of Hollis has made an earnest attempt to meet the needs of its pupils by providing a course in agriculture. Amherst, a high school of almost identical enrollment, offers nothing in the way of courses to meet any of the vocational needs of its pupils. It is also surprising to find that the curriculum of the Wilton High School, a school with an enrollment of over 100 pupils, is so limited. The only thing in the way course offerings that deviates from the traditional classical program is a four year course in domestic arts. There is nothing in the way of vocational offerings for boys. Milford High School, with the largest enrollment, has, as might well be expected, the broadest offerings of any of the schools. In view of the pupils' needs, judged only from the standpoint of their environment, there would be room in the Milford program of study for other course offerings such as agriculture and home economics if the school plant were enlarged enough to warrant the additions.

Number of teachers

In each of the four school systems in question,

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* Douglass, H.L.,"Organization and Administration of Secondary Schools" p.14, Ginn & Co. 1932.

some of the teaching staff conduct classes in grades seven and eight. The amount of teacher time devoted to the lower grades has been taken into consideration in forming the table below. The table therefore shows only the number of teachers employed for instructional purposes for the senior high school, and the total pupil enrollment for these schools.

Number of teachers employed and the pupil enrollment in Senior High Schools

Town	Teachers	Pupils
Amherst	3	47
Hollis	3	47
Wilton	5	133
Milford	11	232

The pupil-teacher ratios as computed from the above table varies from 1-16 to 1-26, the more uneconomical ratios being in the smallest schools.

Costs of teaching

In estimating the cost of teaching for these schools the computations were based upon a school year of 36 weeks, and a 40 to 45 minute recitation period. For the purposes of comparison, the teaching loads were reduced to pupil hours and the costs, based upon teachers salaries alone, were reduced to cents per pupil hour

according to the following formula.* If a teacher receives an annual salary of $1,200 and the school program is divided into six periods per day, the formula would be

$$\frac{\$1,200}{1} \times \frac{1}{36} \times \frac{1}{6} = \$5.56$$

per weekly block for one period per day. In case he was teaching mathematics to twenty pupils at this period five times a week we would divide the $5.56 by 5 x 20 or 100 which gives 5.6 cents, the per pupil-hour cost for teaching this class in mathematics.

The per pupil-hour costs for each subject in each school as tabulated below were obtained in this manner. A wide range of costs will be noted, but it should be understood that these variances may be caused by a difference in teacher salaries, by a difference in teacher load, by a difference in the size of classes, or by a combination of causes. The enrollments in each class section are also tabulated here in order that an idea of the relationship between size of classes and teaching costs may be realized.

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* Davis, J.B.,--Kimball, E.F., "A Study of the Cost of Secondary Education in Connecticut" p. 24, State Board of Education, Hartford, Conn. 1924.

Table I

Amherst High School

Subject	Periods per wk.	Number of Sections	Pupils Per Section	Cost in Cents Per Pupil-Hour
English IX	5	1	18	5.7
" X	5	1	9	11.3
" XI-XII	5	1	18	5.7
Latin X	5	1	3	34.0
French X	5	1	28	3.3
" XII	5	1	7	13.2
Algebra IX	5	1	16	9.3
Geometry	5	1	6	24.7
Adv.Math	5	1	3	49.4
Biology	7	2	15	6.2
			15	6.2
U.S.Hist.XII	5	1	20	5.1
Civics	5	1	17	6.0
Economics)				
Sociology)	5	1	20	7.4

Average per pupil-hour cost for teaching in all subjects is 12.7 cents.

Table II

Hollis High School

Subject	Periods per wk.	Number of Sections	Pupils per Section	Cost in Cents Per Pupil-Hour
English IX	5	1	17	4.2
" X	5	1	15	9.0
" XI-XII	5	1	15	9.0
Latin X	5	1	4	22.8
French X	5	1	8	11.4
French XI	5	1	6	15.2
Algebra IX	5	1	15	9.0
Geometry	5	1	4	34.0
Adv. Math	5	1	7	19.4
Chemistry	5	1	10	12.3
Agriculture IX-X	10	1	12	10.3
" XI-XII	10	1	5	24.6
U.S.Hist.	5	1	15	6.0
Civics	5	1	31	2.9
Nursing & Physiology	5	1	4	22.8

Average per pupil-hour cost for teaching in all subjects is 14.2 cents.

Table III

Wilton High School

Subject	Periods per wk.	Number of Sections	Pupils per Section	Cost in Cents Per Pupil-Hour
English IX	5	1	41	1.9
" X	5	1	36	2.6
" XI	5	1	26	3.6
" XII	5	1	33	2.8
Latin IX	5	1	12	9.0
" X	5	1	13	8.3
" XI-XII	5	1	4	27.0
French X	5	1	22	4.9
" XI	5	1	14	14.0
" XII	5	1	4	27.0
Algebra IX	5	1	40	4.4
" X	5	1	24	7.4
Geometry	5	1	12	14.8
Adv. Math	5	1	5	35.5
Chemistry	7	1	21	4.4
Physics	7	1	16	5.8
Mech.Dr.IX	10	1	15	6.2
" " X	10	1	14	6.6
U.S.Hist.	5	1	29	3.2
Eur.Hist.	5	1	37	2.5
Hist.Civ.	5	1	39	2.0
Economics	5	1	36	4.9
Sociology	5	1	15	6.2
Dom.Arts IX	7	1	14	6.6
" " X	7	1	6	15.4
" " XI	5	1	6	15.4
" " XII	5	1	16	5.8

Average per-pupil-hour cost for teaching in all subjects is 9.2 cents.

Table IV

Milford High School

Subject	Periods per wk.	Number of Sections	Pupils per Section	Cost in Cents Per Pupil-Hour
English IX	5	3	31	2.7
			28	2.8
			25	4.4
English X	5	2	24	4.0
			26	3.7
English XI	5	2	30	3.7
			29	3.8
English XII	5	2	22	5.0
			20	5.5
Latin IX	5	1	21	4.9
Latin X	5	1	8	13.0
Latin XI-XII	5	1	5	20.8
French X	5	1	13	7.4
French XI	5	2	12	8.0
			24	4.0
French XII	5	1	11	8.7
Algebra IX	5	2	38	3.0
			43	1.9
Geometry	5	1	27	7.5
Adv. Math	5	1	13	15.7
Physics	7	1	16	7.5
Biology	7	2	19	5.5
			18	5.8
U.S.Hist.	5	2	24	4.6
			19	5.8
Eur.Hist.	5	1	29	3.8
Hist.Civ.	5	2	30	3.7
			23	4.3
Civics	5	2	33	2.4
			35	3.1
Economics XI	5	1	30	3.3
Economics XII	5	1	33	3.0
Sociology	5	1	21	4.8
Typing X	2	3	10	7.9
			19	4.1
			18	4.4
Typing XI	5	1	11	7.6
Typing XII	5	1	7	11.9

(Continued)

Table IV (Continued)

Milford High School

Subject	Periods per wk.	Number of Sections	Pupils per Section	Cost in Cents Per Pupil-Hour
Stenog.XI	5	1	11	7.6
Stenog.XII	5	1	7	11.9
Bookkg. X	5	2	21	3.8
			16	4.9
Office Prac.*				
Woodwork IX	9	2	15	8.9
			11	12.0
Auto Mech.XI	9	1	15	6.8
" " XII	9	1	5	20.0
Mach.Shop X	9	1	14	7.3
Nursing & Physiology	5	1	29	3.6
Home Econ.	5	1	35	3.0

Average per pupil-hour cost for teaching in all subjects is 6.4 cents.

Examination of the preceding tables show an extremely wide variation in the per pupil-hour costs of teaching. For the costs in an individual class the lowest is found to be 1.9 cents and the highest is 49.4 cents. Comparing the median costs as among all subjects taught in each school the lowest school is 6.4 cents and the highest is 14.2 cents. From these figures it is evident that many classes are being

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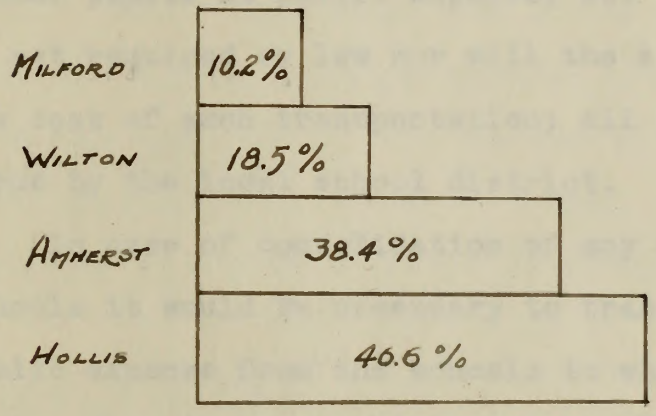
* Office practices is part of the stenography and typing courses in grades XI and XII.

Boston University
School of Education
Library

conducted at costs that are exorbitant. The uneconomical classes are for the most part those classes with a very small enrollment. The following chart shows the percentage of uneconomical classes in each school, considering a class enrollment of ten pupils as the smallest number that can be afforded with any semblance of economy.

Percentage of classes of fewer than 10 pupils



The preceding chart shows that the number of uneconomical classes is larger in the two small schools. The reason for the greater number of these classes in Hollis High School than in Amherst High School, a school of identical enrollment, is due to a combination of different causes. It is very significant that in almost all of these classes with enrollments of less than ten pupils, the total enrollment for the four schools would only form one average section. This is particularly true in the advanced classes in foreign languages and mathematics.

Transportation

In this study, which aims to find out if there are any advantages to be expected from consolidation of high schools, the matter of transportation must be investigated. In New Hampshire, there is no transportation furnished for pupils who have advanced beyond the eighth grade and are over fourteen years of age.* In rare instances certain school districts transport high school pupils at public expense, but this transportation is not required by law nor will the state assume any of the cost of such transportation; all such costs must be borne by the local school district.

In case of consolidation of any of the existing high schools it would be necessary to transport pupils at public expense from the schools to which they are now assigned to the new school center. With this consideration in mind, it is necessary to investigate the costs of transportation as it now applies to elementary schools in order to estimate costs for any proposed transportation of secondary school pupils.

The transporting of pupils in this area is now being done in various sizes of vehicles with capacities ranging from five to thirty-eight pupils. For any possible transportation of secondary pupils there would be no necessity of having any small conveyances. Therefore the following

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* Laws of NewHampshire--Relating to Public Schools, Chapters 116-123.Public Laws Chapter 117:6-117:7.

costs as they now exist in the area applies only to those transportation routes being covered by buses. It must also be remembered that these buses would not be able to carry as many pupils of high school age and therefore the costs per pupil would average higher.

For the school year 1934-1935 the average cost per mile for buses with an average carrying capacity of 28 pupils is 40.6 cents.* The average cost per pupil mile is 1.5 cents or $2.70 per pupil mile for the entire school year. This means that a transportation route of five miles covered twice each day would cost $27.00 per year for each pupil. For transportation of secondary school pupils this annual cost would probably be slightly in excess of $30.00 per pupil.

Summary of Findings

In this section, the information concerning the four high schools included in this study will be summarized in relation to the "Nine Major Features of School Practice" cited on page five.

1. Admission and promotion of pupils:

All schools in the area function satisfactorily in this respect. Those districts maintaining elementary schools only, are under the direction of the same superintendent of schools as is the district maintaining the

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* Conveyors Contracts - Supervisory Unions #40 and #63 School Year 1934-1935.

high school where the pupils of these outlying districts continue their education. This makes for a standardization of the elementary school studies such as will assure admission to high school.

2. Arrangement of instruction, in terms of departmentalization, the size of classes, the length of school sessions, the use of standardized tests and the adoption of special schemes which make possible direct attention to individual differences:

In so far as is possible, the work of grades seven and eight in all of the districts maintaining high schools is attempted. All of these districts are hampered by limitations of classroom facilities and of teaching staffs, therefore there is no district in which departmentalization is in any sense complete. In the outlying districts grades seven and eight are generally under the direction of a single teacher.

There is a wide variance in the size of classes. In the smaller schools at Amherst and Hollis there is a predominance of very small and therefore very expensive classes. In the Wilton High School, on the other hand, the teacher load is in many cases excessively heavy, due to large class enrollments. In Milford, although there are some classes too small to be economical and a few too large for an optimum teaching load, the distribution is fairly constant.

All high schools in the area are in session at least 180 school days per year as is required by law.* The

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*Laws of New Hampshire--Relating to Public Schools. Ch. 117, Sec. 1. State Board of Education, Concord, N.H. 1931.

daily school sessions in each school are approximately the same, having six periods of from 40 to 45 minutes in length for the teaching of the regular school subjects. There is also provided one period a day for music, clubs, assemblies, fundamentals, and other activities.

There is small use made of standardized tests in any of the senior high schools in this area except for two standardized tests given to all high school seniors, a requirement of the State Board of Education. In grades seven and eight however there is an increasing tendency to use some of the new type tests. In the Wilton High School there will be standardized tests given this year to all pupils in grade nine. A real effort is being made in this school to set up a testing program.

In so far as it is possible each school in this area is doing its utmost to provide for individual differences. All schools are using variable assignments as one means to meet this problem. The smaller schools are able, through the medium of their small classes, to provide more coaching or individual attention to pupils than is possible in the larger schools. Milford High School is the only school large enough to provide more than one teaching section for each subject and in so far as the obstructions caused by schedule-making permits, ability grouping is practised. Hollis High School by offering courses in agriculture is attempting to meet this problem from the standpoint of differences caused by environment. Wilton High School, by a four year course

in Domestic Arts is attempting the same thing for the girls. In general however, it may be said without any due criticism of the teachers or of the administrators of these schools, that more effort might be exerted by all concerned to provide additional means to meet this problem.

3. Scope and arrangement (but not the detailed content) of the program of studies:

The programs of study for each school are to be found on pages 40-43. The offerings of the two smaller schools are particularly meager, although an earnest attempt to offer as many subjects as is possible by means of alternation and combination of courses each year is the present practice. The Wilton High School, with an enrollment of over100 pupils has held very closely to the traditional classical curriculum. There is no vocational offering for boys above grade eight, there are no commercial subjects offered, yet four years of mathematics, three years of Latin and of French are still held in the curriculum. The one departure from the formal classical training is a four year course in Domestic Arts for girls. The Milford High School has four curriculums, the classical, the commercial, the mechanic arts, and the general. Even though this can be considered a rather broad offering for a school of its size, there should be made available to the pupils of this school courses in agriculture and domestic arts.

Health comes first in the accepted objectives of secondary education, yet one course in Nursing and Physi-

ology in the Milford and Hollis High Schools are the only pretenses that are being made toward a program of health education.

Realizing that in this period of national distress, students must be prepared for more effective citizenship by acquainting them with the great social, economic, and political problems confronting the nation to-day, the administrators of the schools in this area are making an earnest effort to reorganize the courses in the social studies. Courses in economics and sociology have recently been introduced.

4. The scope and arrangement (but not the detailed content) of the program of extra-curricular activities:

Again the matter of size is the limiting factor in the development of programs of extra-curricular activities. The two smaller schools are greatly handicapped through not having sufficient numbers to participate. Considering the athletic programs, Amherst has none; Hollis has basketball for both girls and boys; Wilton has basketball for both girls and boys, and baseball; Milford's athletic program includes football, basketball for both girls and boys, and baseball. This spring for the first time, field hockey for girls will be established.

Each of the four schools devotes one period per day to activities programs. This is about the only general action that has been adopted by all of the schools.

5. Schools' provision for vocational and educational guidance of its pupils:

There is no organized program of guidance in any of the schools. Whatever is done in the way of pupil guidance is done by the school principal. Although a committee was appointed by the Educational Council of New Hampshire to study the matter of guidance and to submit a plan for adoption, and a tentative plan submitted by this committee is available to every school principal in the state, there has been no attempt to follow the suggestions of this committee in any of the four schools in question. In the Milford High School, a course in occupations is being offered; this of course, can be considered as making a start in the matter of vocational guidance.

6. Provision for the articulation of the school with other school units:

The school buildings in Amherst, Hollis, and Wilton house the school population from gradesI to XII and the matter of articulation is simplified thereby. In Milford grades VII to XII are in the same building and no difficulty is experienced. Conditions are not so favorable in those towns that maintain elementary schools and send pupils to one of these four high schools on a tuition paying basis. Mont Vernon, the one exception, simplifies the problem of articulation by sending the pupils of grades VII and VIII to Milford. Thus the pupils of this town receive the first six years of their education in one school and the latter six in another.

7. The composition of the teaching staff:

Under existing conditions there can be no criticism of the teaching staffs of any of the schools. Of course in the schools of particularly small enrollments the teachers are required to teach a larger number of different subjects and thereby no great amount of specialization can be expected. In Wilton where many of the classes have excessive enrollments an additional teacher would greatly improve classroom instruction. Milford also with effectiveness, could use the services of an additional teacher.

8. Arrangements for the supervision of instruction:

With the principals of the high schools each teaching several classes a day in addition to their other duties there is very little opportunity for them to supervise instruction. The superintendents of the supervisory unions involved, each have several districts under their supervision and thus a much smaller amount of their time can be devoted to supervision of teaching than might be considered desirable. The State Department of Education has only one supervisor for high schools, hence supervision from this source is not very frequent.

9. The school's housing and equipment:

All schools in the area are handicapped by building limitations. The main reason for the meager offerings in the Wilton High School program of studies is the fact that there is no space for vocational shops or commercial rooms. The Milford High School has no gymnasium and the assembly room is of inadequate seating

capacity. This school is also limited as to sufficient space to offer any additional courses in domestic arts. The two smaller schools at Amherst and Hollis have sufficient space for the school work now undertaken but there is no opportunity of offering more courses and the seating capacity of the buildings is not sufficient to allow for any considerable increase in pupil enrollment. The school districts of Amherst and Wilton are seriously considering ways and means of enlarging their present school plants.

The following general conclusions can be drawn in regard to the efficiency of secondary education in this area and the advantages that might well be derived through some form of centralization of high schools. Specific recommendations will be made in the next section of this study.

There is not sufficient variation in the course offerings of these schools to meet the needs of all of the pupils. The great variety in the size of classes makes for two undesirable conditions; first, the large number of exceptionally small classes is expensive; and many classes of large enrollment can not do full justice to the pupils enrolled therein. The building facilities are insufficient for many of the present needs and will allow for no further enrollments or the addition of any further courses of study which would require separate space.

By means of centralizing these schools many if not all of the present limitations could be obviated. It is impossible to prophesy just what subjects the pupils would desire to take in a larger school, where they would have an opportunity for a wider selection of subjects, but if under the consolidated system these children elected to study the same subjects as at present there would be five fewer teachers required and the teaching loads would be much more evenly distributed. The following table shows comparative figures under the present system and under the consolidated system.

Number of Teachers and Number of Classes Required

	Present System	Consolidated System
Total number teachers	22	17
Total number of periods taught per week	576	439
Average number of periods per week per teacher	26.2	26
Largest class enrollment	41	33
Average class enrollment	18.3	23.8
Smallest class enrollment	3	10

Due to the fact that the pupils enrolled under the present system would be unlikely to take the identical subjects that they are now taking the above table can only be considered as indicative of the savings in

teacher salaries and of the more even distribution of teacher load that would be possible.

In a consolidated school for this area there could be afforded better equipment without greatly increasing the expense thereof through the savings that would be made by eliminating the duplication that is now necessary in much of the apparatus required in each school.

IV

Conclusion

The findings in this study are such as to indicate that the present limitations of secondary education in the area could be largely removed by consolidation of all of the secondary schools. This conclusion is similar to the one drawn by the recent National Survey of Secondary Education. In the summary of this survey it is stated that: "One conclusion of the whole study is that size is a more important factor than selection in making for constructive differences among small schools.------ The obvious implication is to have as few as possible of the very small schools.-----To maintain a good school with small enrollment is always an uphill and often an impossible task." *

Milford being the most centrally located in relation to the other towns in the district is the logical place for the centralized school unit. Additions to the present school plant adequate to provide for the increased enrollment could be made by adding two stories to the wing of the building. This would provide a combination gymnasium-assembly hall, and four additional class rooms. Sufficient space for two more class rooms would be released in the main building where the present assembly hall is located.

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*Ferriss, Emery N., "Secondary Education in Country and Village." D. Appleton Co.,New York 1927.

Pupils at present assigned to the high schools at Hollis, Amherst, and Wilton who are paying for their own transportation would continue to furnish their own transportation to these points. From these points to the new school at Milford they would be transported at public expense. It would be extremely unfair to expect the parents to assume any further burden for transportation than they are now bearing. This would mean the establishing of three bus routes as follows: 1. Wilton to Milford, 5 miles; 2. Amherst to Milford, 3 miles; 3. Hollis to Milford, 9 miles. Much of the cost attendant upon this added transportation would be saved through the economies made possible by the reduction in the number of teachers required under the consolidated system.

Using the present program of studies of the Milford High School as a nucleus (page 43), certain additions should be made.

First: A program of health instruction should be established which would include annual physical examinations, gymnasium classes for correction of posture defects and classes in physical and mental hygiene; this program to continue through all years.

Second: There should be a comprehensive course in home economics for girls. The aims of such a course should be as recommended by the Survey of Rural Education in New York State,* namely, "The purpose of the homemaking department is to offer to pupils

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*Eaton, Theodore H., "Vocational Education, Rural School Survey of New York State." Wm.F.Fell Co,, Printers, Philadelphia,Pa.1922

of secondary school age a well rounded course embodying the general principles of household organization and management with opportunity for laboratory practice. The course as planned will not only prepare the girl to manage her house, but will also lay a foundation for wage earning occupations which have their origin in homemaking activities." Third: A course in agriculture should be available for the boys. In spite of the fact that all of the pupils in this area may be able to find part or full time employment on farms after leaving school there is only one school in the area now offering courses in this subject. The schools can not do very much in the way of vocational training which would be of value in the main industries of the section, textiles, furniture manufacturing and stone-cutting, but courses in agriculture and mechanical arts should have great practical value for many of the boys in the school. Fourth: A one year course in typewriting should be open to boys. Ability to operate a typewriter is an asset in any business that a boy may enter, yet there is little or no opportunity for boys to get this valuable training, in the present high schools. Fifth: There should be an integrated course in social studies running throughout the period of a pupil's secondary education. This course should be such as to include the study of race and international relations, vital problems in the social, political,

and economic conditions in the world to-day.

Sixth: There should be more attention given to art and music than is the case at present.

The larger school unit made possible by consolidation would be better able to provide an organized program of vocational and educational guidance under the direction of a capable guidance officer.

The extra-curricular activities would no longer suffer from lack of pupils to participate.

Provisions for individual differences could be greatly improved through the consolidated school; larger class enrollments would make possible homogeneous grouping, there would be an opportunity for special classes for the gifted and the slow. Those pupils with vocational rather than scholastic aptitudes would be enabled to pursue those subjects in which there would be a greater chance for success.

Library, shop and science equipment would be greatly improved. At present much equipment actually needed in the schools is not furnished because it is felt that the expense involved is excessive when compared with the small school enrollments. This added expense would on the whole not be excessive in the proposed consolidated school because much of the duplication of equipment that is necessary under the present system would be ended.

The last betterment that is claimed for the centralization of these four schools pertains to the instructional staff. The teachers under the proposed system would have

classes of optimum size and no teacher in the system would be required to teach as many different subjects as is now necessary. This fact will allow for greater specialization in the teaching staff.

The advantages that might well be expected from the consolidation of secondary schools in this area are summarized in the following list: (The order in which these advantages are listed is not in order of importance.)

Advantages of the Proposed Centralization

1. Better retention of pupils.
2. Pupils can be graded and classified better.
3. Better teaching.
4. Better supervision of instruction.
5. Lower per-pupil costs.
6. Every child will have equal opportunity for education regardless of where he resides.
7. Circle of acquaintance of children will be widened, thus developing initiative, self reliance and individuality. *
8. Better library, science, and shop equipment.
9. Broader offering of subject matter.
10. A systematic program of health education.
11. Proper vocational and educational guidance.
12. Better provision for individual differences.
13. Better opportunity for extra-curricular activities.
14. Improvement in articulation between school units.

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*Mueller,A.D. "Progressive Trends in Rural Education" Ch.III, The Century Co.,New York,1926

15. Greater use of both intelligence and achievement tests.
16. Less widely fluctuating pupil-teacher ratios.
17. More opportunity for classes of an exploratory nature.
18. Introduction of more practical courses of study.
19. Opportunity for supervised study.
20. Greater possibility of introducing the 60 minute period.
21. Opportunity for more courses of aesthetic and cultural value as music and art.

V

Suggested Reorganization

The plan for the reorganization of secondary education in Supervisory Unions #40 and #63 in the state of New Hampshire as is outlined in this section is the result of the study of local conditions and the information gleaned from the findings of the National Survey of Secondary Education which were published in 1933. The following excerpts from Monographs #1 and #5 of this survey are indicative of the trends in secondary education.

> "As judged by the criteria set up in this study the 3-3 plan junior-senior high school represents in general the most effective type of organization among those in common use." *
>
> "Judged in terms of comprehensiveness and consistency, junior-senior high schools organized as parts of 6-3-3 systems seem at present to be superior to other types of organization."**

The plan

1. There should be established at Milford a six-year high school, divided in its organization into two

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*Spaulding,F.T.,Frederick,O.I.,Koos,L.V.,"National Survey of Secondary Education" Monograph #5,p.247, Office of Education,Washington,D.C. 1933

**Koos,L.V., and staff, "Monograph #1,p.61, Office of Education, Washington,D.C. 1933.

units of three years each. The pupils of grades X, XI, and XII in the high schools at Amherst, Hollis, and Wilton, should be transferred to the Milford school and transported from the location of their present school to the new school in Milford, at public expense.

2. The schools of Amherst, Hollis, and Wilton should be organized on a 6-3 basis with the course of study in the junior high schools as nearly identical with that of the Milford Junior High School as is possible, thereby assuring perfect articulation among the different districts sending their senior high school pupils to the Milford Senior High School.

3. All other towns in supervisory unions #40 and #63 should discontinue grades VII and VIII and maintain only six year elementary schools. The pupils of grades VII and VIII in these towns shall be transported to junior high school at public expense as is required by law.*

4. Pupils of grades VII, VIII, and IX from the towns of Brookline, Milford, and Mont Vernon shall attend the junior high school at Milford. Pupils of grades VII, VIII, and IX from the towns of Greenfield, Lyndeborough, Temple, and Wilton shall attend the junior high school at Wilton. The junior high school maintained at Amherst and Hollis shall serve the needs of their own communities only.

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*Laws of New Hampshire--Relating to Public Schools Ch. 117; Sec. 6. State Board of Education, Concord, N. H., 1931

Under this plan, there would be a senior high school at Milford, enrolling in grades X, XI, and XII approximately 300 pupils. The junior high school at Milford would have an enrollment of about 260. This gives a six year unit with the sizeable enrollment of 550 or over. The estimated enrollments for the other three junior high schools are as follows: Wilton - 125, Amherst - 50, and Hollis - 50. The advisability of maintaining the two latter junior high schools, with enrollments of only 50 pupils, is perhaps questionable. It would, however, minimize opposition from the residents of these communities who would oppose plans for centralization on the grounds that the town was losing its high school. If after sufficient trial it was found inexpedient to continue these two schools, the pupils could be assigned to the junior high school at Milford.

The building program that this consolidation would necessitate would be confined to enlarging the school plant at Milford by adding two stories to the one story wing that is now attached to the building and some minor alterations within the central part of the building. The enlargements of the school plants at Wilton and at Amherst which are now under consideration would no longer be necessary. The crowded conditions now experienced in these schools would be relieved.

The adoption of the plan outlined above would serve this area, which has a population of almost 10,000, with one senior high school and four junior

high schools, and though possibly adding somewhat to the cost of education this added cost would be more than offset by the educational advantages offered to the pupils of all towns involved.

Bibliography

1. Almack, J.C., and Bursch, J. F., "The Administration of Consolidated and Village Schools." Houghton Mifflin Co., Boston, 1925.

2. Blose, David T., "Consolidation of Schools and Transportation of pupils, 1931-1932." U. S. Department of the Interior, Office of Education. Circular #132, Washington, D. C. February 1934.

3. Covert, Timon., "Financial Implications of the Consolidation of Schools and the Transportation of Pupils." U. S.Department of the Interior, Office of Education, Circular #117, Washington, D. C., March, 1934.

4. Cyr, Frank W., "Special Problems of the Small Secondary School." Department of Rural Education, National Education Association. Washington, D. C., February 1934.

5. Church, E. E., "Some Factors Determining High School Teaching Costs." The High School Teacher, February, 1926.

6. Davis, Jesse B., and Kimball, Elwell F.,"A Study of the Cost of Secondary Education in Connecticut." State Board of Education, Hartford, Conn. 1924.

7. Douglass, H. L., "Organization and Administration of Secondary Schools." Ginn and Co., Boston, 1932.

8. Eaton, Theodore H., "Vocational Education, Rural School Survey of New York State." Wm. F. Fell Co., Printers, Philadelphia, 1922.

9. Feingold, G. A., "The Basic Function of Secondary Education." School and Society 40:825-32, December 22, 1934.

10. Ferriss, Emery N., "Secondary Education in Country and Village." D. Appleton Co., New York, 1927.

11. --------, "The Rural High School, Rural School Survey of New York State." Wm. F. Fell Co., Printers Philadelphia, 1922.

12. ---------, "The Rural High School--Its Organization and Curriculum." U. S. Bureau of Education, Bulletin #10, Washington D. C. 1925.

13. Ferriss, E. N., Gaumnitz, W. H., and Brammel, P. R., "National Survey of Secondary Education." Bulletin 17, Monograph #6, U. S. Gov't Printing Office, Washington, D. C. 1933.

14. Fretwell, Elbert K., "Extra-Curricular Activities in Secondary Schools." Houghton Mifflin Co., Boston, 1931.

15. Gaumnitz, W. H., "The Place of the Small School in Secondary Education." Department of Rural Education, National Education Association, Bulletin Washington, D. C., February, 1934.

16. Hand, Harold C.,"Guidance in the Small High School." Department of Rural Education, National Education Association, Bulletin,Washington,D.C. Feb. 1934.

17. Keesecker, W. W., and Sewell, F. C., "National Survey of Secondary Education." U.S. Department of the Interior, Office of Education, Bulletin #17, Monograph #9, Washington, D.C. 1933.

18. Kefauver, Grayson N., and Hand, Harold C., "An Appraisal of Programs of Guidance in Secondary Schools." Proceedings of the 17th Annual Meeting of the Department of Secondary School Principals of the N. E. A., Bulletin #45, Minneapolis, Minn., March, 1933.

19. Koos, Leonard V., "The American Secondary School." Ginn and Co., Boston, 1927.

20. Koos, Leonard V., and Staff. "National Survey of Secondary Education," Bulletin #17, Monograph #1, U. S. Gov't Printing Office, Washington, D. C., 1933.

21. Koos, L. V., and Kefauver, G. N., "Guidance in Secondary Schools." Macmillan Co., Boston,1932.

22. Laws of the State of New Hampshire, 1845.

23. Laws of the State of New Hampshire, 1919.

24. Lindsey, Morton C., "A Study of Bus Transportation in Consolidated Schools with Specific Recommendations for the Established Consolidated School at Monsey, New York." School of Education, New York University, 1929.

25. Mitchell, Morris R., "Progressive Methods in a Small High School." Dept. of Rural Education, N.E.A., Bulletin, Washington, D. C. February, 1934.

26. Mueller, A. D., "Progressive Trends in Rural Education." The Century Co., New York, 1926.

27. New Hampshire State Board of Education, Biennial Reports 1922--1934.

28. New Hampshire State Board of Education, "Report of the Committee on Guidance." Concord, N. H., August, 1933.

29. New Hampshire State Board of Education. "The Cost of High School Instruction, 1933-1934." Concord, N. H., 1934.

30. Puckett, R. C., "Making a High School Schedule of Recitations." Longmans, Green and Co., New York, 1931.

31. Rapeer, L. W., "The Consolidated Rural School." Scribners, New York, 1920.

32. Remmers, H. H., "Distinguished Students--What They Are and Why." Bulletin of Purdue University, Vol. XXXI, #2, October 1930.

33. Rufi, John., "The Small High School." Teacher's College, Columbia University, Contributions to Education #236. Bureau of Publications, T.C. Columbia University, 1926.

34. Sheffer, W. E., "Cooperative High School Areas." Dept. of Rural Education, N. E. A. Bulletin, Washington, D. C. February, 1934.

35. Spaulding, Francis T., "The Six-Year Secondary School." Dept. of Rural Education, N. E. A. Bulletin, Washington, D. C., 1934.

36. Spaulding, Francis T., Frederick, O. I., and Koos, L. V., "National Survey of Secondary Education." Bulletin #17, Monograph #5, U.S. Gov't Printing Office, Washington, D.C., 1933.

37. "Tentative Report of the Sub-Committee on Curriculum Revision for the Small Massachusetts High School." Commonwealth of Massachusetts, Department of Education, Boston, Mass. 1934.

38. Terry, Paul W., "Supervising Extra-Curricular Activities in the American Secondary School." McGraw Hill Book Co., New York, 1930.

39. Williams, R. C., "Educational Programs of Smaller Graded and High Schools." Dept. of Public Instruction, Research Bulletin #14, Des Moines, Iowa. June, 1933.

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